**Hardy Weinberg Equilibrium Lab: Class Data**

Ms. Ottolini, AP Biology

**Case #1: Class Data**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Surviving Genotypes** | | |  | **Surviving Alleles** | | |
| **Generation** | **AA** | **Aa** | **aa** | **Total Individuals** | **A** | **a** | **Total Alleles** |
| Parental | **0** | **28** | **0** | **28** | **28** | **28** | **56** |
| F1 | **4** | **13** | **11** | **28** | **21** | **35** | **56** |
| F2 | **4** | **16** | **8** | **28** | **24** | **32** | **56** |
| F3 | **2** | **13** | **13** | **28** | **17** | **39** | **56** |
| F4 | **1** | **18** | **9** | **28** | **20** | **36** | **56** |
| F5 | **3** | **9** | **16** | **28** | **15** | **41** | **56** |

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| --- | --- | --- | --- | --- | --- |
|  | **Frequency of Genotypes** | | | **Frequency of Alleles** | |
| **Generation** | **p2 (AA)** | **2pq (Aa)** | **q2 (aa)** | **p (A)** | **q (a)** |
| **F5 (HW Theoretical)** | **(0.5)2 = 0.25** | **2(0.5)(0.5) = 0.5** | **(0.5)2 = 0.25** | **0.5** | **0.5** |
| **F5 (Actual)** | **3/28 = 0.11** | **9/28 = 0.32** | **16/28 = 0.57** | **15/56 = 0.27** | **41/56 = 0.73** |

**Case #2: Class Data**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Surviving Genotypes** | | |  | **Surviving Alleles** | | |
| **Generation** | **AA** | **Aa** | **aa** | **Total Individuals** | **A** | **a** | **Total Alleles** |
| Parental | **0** | **25** | **0** | **25** | **25** | **25** | **50** |
| F1 | **10** | **15** | **0** | **25** | **35** | **15** | **50** |
| F2 | **17** | **8** | **0** | **25** | **42** | **8** | **50** |
| F3 | **17** | **8** | **0** | **25** | **42** | **8** | **50** |
| F4 | **14** | **11** | **0** | **25** | **39** | **11** | **50** |
| F5 | **15** | **10** | **0** | **25** | **40** | **10** | **50** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frequency of Genotypes** | | | **Frequency of Alleles** | |
| **Generation** | **p2 (AA)** | **2pq (Aa)** | **q2 (aa)** | **p (A)** | **q (a)** |
| **F5 (HW Theoretical)** | **(0.5)2 = 0.25** | **2(0.5)(0.5) = 0.5** | **(0.5)2 = 0.25** | **0.5** | **0.5** |
| **F5 (Actual)** | **15/25 = 0.6** | **10/25 = 0.4** | **0/25 = 0.0** | **40/50 = 0.8** | **10/50 = 0.2** |